United States Patent [19]

Myer

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[54] **ZONE PURIFICATION OF CYLINDRICAL INGOTS**

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[52] **U.S. Cl.** ..... **156/617 H**; 156/DIG. 70

[58] **Field of Search** ..... 156/617 H, 617 R, 620, 156/DIG. 71, DIG. 83, DIG. 70; 13/DIG. 1

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[57] **ABSTRACT**

Cylindrical ingots of materials that expand on melting or freezing are purified or zone refined by a process which includes providing a tubular container having both a cylindrical cavity and a slot along its entire length. In zone refining, as is well-known, a heater of a predetermined elevated temperature traverses from one end of a normally solid charge to another at least once to thereby sweep impurities to one end of the charge. During the zone refining process, material which expands on phase change (e.g., solid to liquid) flows into the slot. As a consequence, fractures and other damage to the container and/or zone-refined material are minimized. The substantially round cross section is retained following removal of the excess material from the zone refined ingot after solidification.

3 Claims, 1 Drawing Figure